

```

1  #include <iostream>
2  #include <conio.h>
3  using namespace std;
4
5  const char k_player = '@';
6
7  void draw_level(char my_array[], int width, int height, int playerx, int playery);
8
9  int get_index(int x, int y, int width);
10
11 bool update_player(char my_array[], int& playerx, int& playery, int width, bool& has_key);
12
13 int main() {
14
15     const int width = 13;
16     const int height = 11;
17
18     char level_array[] = {
19
20         '+', '-', '-', '-', '-', '-', '-', '-', '-', '-', '-', '-', '+',
21         '|', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', '|', ' ', ' ', '|',
22         '|', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', '|', ' ', ' ', '|',
23         '|', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', '|', ' ', ' ', '|',
24         '|', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', '|', '-', ' ', ' ', '|',
25         '|', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', '|', ' ', ' ', '|',
26         '|', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', ' ', '|', ' ', ' ', '|',
27         '|', ' ', ' ', ' ', ' ', ' ', ' ', '-', '-', '-', '-', '-', '-', '|',
28         '|', ' ', ' ', ' ', ' ', ' ', ' ', '|', ' ', ' ', ' ', ' ', ' ', '|',
29         '|', ' ', ' ', ' ', ' ', ' ', 'D', ' ', ' ', ' ', ' ', ' ', 'X', ' ', '|',
30         '+', '-', '-', '-', '-', '-', '-', '-', '-', '-', '-', '-', '+',
31     };
32
33     int playerx = 1;
34     int playery = 1;
35     bool has_key = false;
36     bool game_over = false;
37
38     while (!game_over)
39     {
40         system("cls");
41         draw_level(level_array, width, height, playerx, playery);
42         game_over = update_player(level_array, playerx, playery, width, has_key);
43     }
44     draw_level(level_array, width, height, playerx, playery);
45     game_over = true;
46     cout << "You win!";
47
48 }
49
50 void draw_level(char my_array[], int width, int height, int playerx, int

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```
    playery)
51 {
52     for (int y = 0; y < height; ++y)
53     {
54         for (int x = 0; x < width; ++x)
55         {
56             if (playerx == x && playery == y)
57             {
58                 cout << k_player;
59             }
60             int index = get_index(x, y, width);
61             cout << my_array[index];
62         }
63         cout << endl;
64     }
65 }
66
67 int get_index(int x, int y, int width)
68 {
69     return x + y * width;
70 }
71
72 bool update_player(char my_array[], int& playerx, int& playery, int width,  ↗
    bool& has_key)
73 {
74     char input = _getch();
75     int update_playerx = playerx;
76     int update_playery = playery;
77
78     switch (input)
79     {
80     case 'w':
81     case 'W':
82     {
83         update_playerx--;
84         break;
85     }
86     case 's':
87     case 'S':
88     {
89         update_playerx++;
90         break;
91     }
92     case 'a':
93     case 'A':
94     {
95         update_playerx--;
96         break;
97     }
98     case 'd':
99     case 'D':
100    {
101        update_playerx++;
```

```
102     break;
103 }
104
105 int index = get_index(playerx, playery, width);
106
107 if (my_array[index] == ' ')
108 {
109     playerx = update_playerx;
110     playery = update_playery;
111 }
112 if (my_array[index] == '*')
113 {
114
115     has_key = true;
116     my_array[index] = ' ';
117     playerx = update_playerx;
118     playery = update_playery;
119 }
120 if (my_array[index] == 'D' && has_key)
121 {
122     my_array[index] = ' ';
123     playerx = update_playerx;
124     playery = update_playery;
125 }
126 if (my_array[index] == 'X')
127 {
128     my_array[index] = ' ';
129     playerx = update_playerx;
130     playery = update_playery;
131     return true;
132 }
133 }
134 return false;
135 };
```